

COMMUNICATIONS EQUIPMENT MODIFICATION NOTE 80, REVISION A

(for Electronics Technicians)

Maintenance, Logistics, and Acquisition Division

W/OPS12: JJE

- SUBJECT : NOAA Weather Radio (NWR) Remote Off Air Monitoring System (ROAMS) Firmware Upgrade and Circuit Board Modification
- PURPOSE : To inspect and upgrade the ROAMS EPROM firmware from version 1.7 to version 2.3 and to inspect and modify the printed circuit board to allow remote resetting of the voice integrated circuit (IC).
- This amendment adds Crown and Armstrong transmitter sites to the list of affected sites, updates the list of affected SRS and Energy-Onix sites, and offers suggestions to mark the outside of the ROAMS chassis after completion of the Mod.**
- SITES AFFECTED : All SRS, Energy-Onix, **Crown**, and **Armstrong** transmitters (see Attachment **B** for a complete list of sites).
- ESTIMATED COMPLETION DATE : 30 days after receipt of parts and modification note.
- EQUIPMENT AFFECTED : NWR ROAMS units (B345) attached to the SRS (B220/B222/B224), Energy-Onix (B230/B232), **Crown** (B240/B242/B244), and **Armstrong** transmitters (B250/252/254).
- SPARES AFFECTED : Spares at Independent Technologies (INTEC) will be inspected and modified as necessary.
- ACCOMPLISHED BY: NWS and/or contractor electronics technicians.
- PARTS REQUIRED : - Version 2.3 EPROM
- Approx. 12 inch length of No. 24 or 26 gauge Teflon wire
- SOURCE OF MATERIALS : After inspecting the EPROM for the version number and the circuit board for the revision letter (attachment A, steps 7 and 10), determine if either or both parts are needed, then contact NWS headquarters either by phone or email:

Wayne Hart: Wayne.Hart@noaa.gov 301-713-1847 x192
Peter Georgiou: Peter.Georgiou@noaa.gov 301-713-1847 x189

The parts required will be issued to each site by Independent Technology (INTEC) in Scottsville, NY.

TOOLS AND TEST EQUIPMENT REQUIRED : #1 and #2 Phillips screwdrivers, wire strippers, cutters, pliers
Low wattage soldering iron (with fine tip) and solder
IC extraction and insertion tool (for EPROMS)
Ohmmeter or multimeter
Small flat-blade jeweler's screwdriver
Antistatic workstation kit
Magnifying glass (optional)

TIME REQUIRED : 1.5 hours for EPROM installation and printed circuit board modification.

DOCUMENTS AFFECTED : None.

AUTHORIZATION : The authority for this modification is by National Weather Service Headquarters direction.

VERIFICATION STATEMENT : This procedure was tested and verified at Akron, Ohio (ARNO1).

DISPOSITION OF REMOVED PARTS/MATERIALS : The removed version 1.7 (or older) EPROM MUST be returned to INTEC for reprogramming. Insert the removed EPROM into a piece of antistatic foam and ship to:

Independent Technology, Inc (INTEC)
39 Main Street
P.O. Box 197
Scottsville, New York 14546

PROCEDURE : The ROAMS unit needs to first be inspected to see if the firmware and/or PC board modifications have been made. The attachments in this procedure contain instructions for inspecting and replacing the EPROM and inspecting and modifying the circuit board.

Attachment **A** provides procedures for implementing this modification.

**REPORTING
INSTRUCTIONS**

- : Report the completed modification using the Engineering Management Reporting System (EMRS) according to the instructions in NWS Instruction 30-2104, Maintenance Documentation, Part 4 and Appendix G. Include the following information on the EMRS report:
- a. An equipment code of **B345** in block 7.
 - b. The ROAMS unit serial number in block 8.
 - c. A Mod No. of **80A** in block 17a.

A sample EMRS report is provided as attachment **C**.

Mark S. Paese
Director, Maintenance, Logistics, and Acquisition Division

Attachment A - Inspection and Modification Procedure

Attachment B - Effectivity

Attachment C - EMRS Report Sample

Attachment A

Inspection and Modification Procedure

NOTE: Read the entire procedure and verify receipt of all required parts before proceeding with the actual modification.

The following is the procedure to inspect and, if necessary, change out the EPROMs for the version 1.7 to version 2.3 firmware upgrade and to inspect and modify the printed circuit board (PCB):

1. Remove power from ROAMS by unplugging the power plug from the back of the ROAMS unit.
2. Unplug the I/O connector from the back of the ROAMS unit.
3. Remove ROAMS from the transmitter equipment by removing the four Phillips screws securing the ROAMS chassis to the equipment rack and setting it on the anti-static pad.
4. Connect the ground strap from the anti-static kit to the wrist.
5. Remove the top cover plate of ROAMS by removing the three Phillips screws.
6. Remove the front panel by removing the two 1/4" nuts from the chassis and front cover plate.
7. Verify the EPROM (marked U6 on the PCB component side) is version 1.7 or earlier. Version 1.7 is marked with a "V1.7" on the label on the top of the EPROM. If it is already marked as version 2.3 ("V2.3"), skip to step 10 to perform the PCB inspection and modification. If not, proceed to the next step.
8. Carefully remove the version 1.7 EPROM from U6 using an IC puller.
9. Making sure the cutout at the end of the EPROM aligns with the cutout on the socket and PCB, carefully install the version 2.3 EPROM into the socket using the IC insertion tool. If the tool is not available, carefully line up the EPROM pins with the socket and push the EPROM fully into the socket making sure the IC pins do not bend or fold under the EPROM.

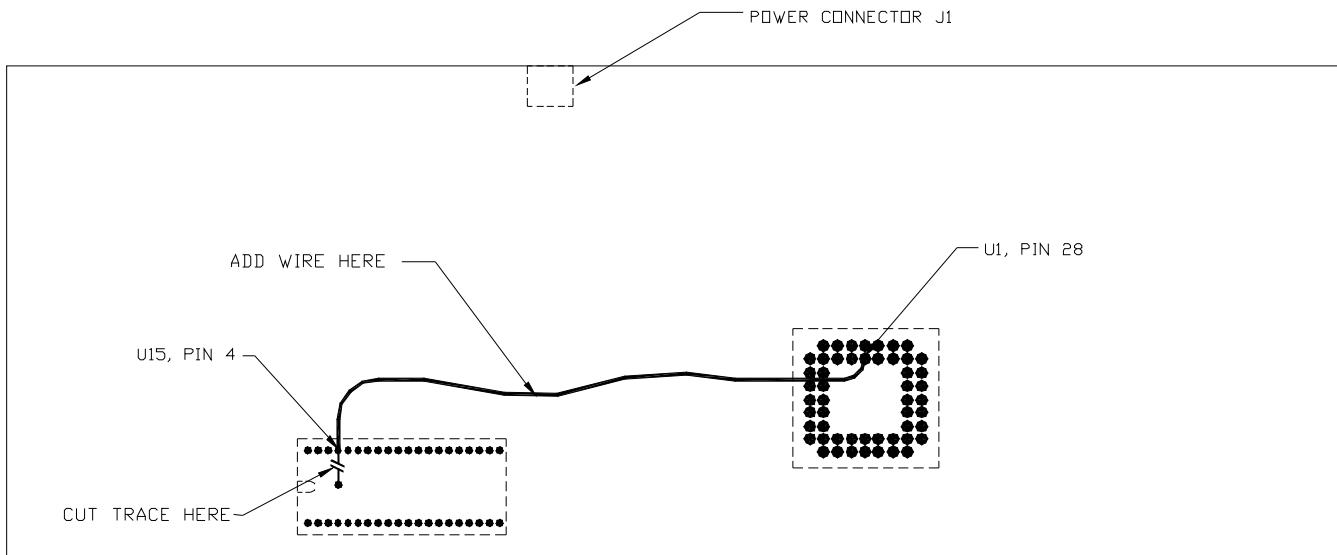
NOTE: This ends the EPROM replacement procedure. The following is the procedure to inspect and if necessary, modify the printed circuit board.

10. Look on the component side of the circuit board for the words "NWS ROAMS". Below those words is a model number and revision of the PCB. If it is marked "MU-103B REV C" or a later REV letter (D, E, etc.), skip to step 17 since the PCB has already been modified. If REV A or REV B, proceed to the next step to add a wire and cut a PCB trace.
11. Remove the circular mounting nut holding on the power connector. Twist the power connector counter-clockwise to remove.

12. Remove connectors (+ and -) from the spade lugs on the battery.
13. Remove the circuit card from the plastic standoffs by pushing in the release tabs and gently pulling on the circuit card vertically (one at a time) then lifting the card from the metal bracket.
14. Using the supplied piece of Teflon wire, cut the wire to the appropriate length then strip back about 1/8" of insulation from each end (see Figure 1, ROAMS PCB diagram).
15. Referring to the ROAMS PCB diagram (Figure 1) and working on the solder side of the PCB, solder one end of the Teflon wire to U1 pin 28 and the other end to U15 pin 4 taking care to route the wire around the soldered circuit board component pads.
16. Using a small, sharp cutting tool, cut the foil trace between U15, pin 4 and the end of the trace approximately in the middle of the bottom of the U15 socket (see Figure 1). Use an ohmmeter to verify the trace has been opened.
17. Re-install the ROAMS PCB by reversing the procedures in steps 13, then 12, then 11.
18. Install the front panel to the chassis and front cover plate.
19. Install the top cover and re-install the ROAMS unit in the transmitter rack.
- 19a. **Attach a sticker to the chassis (or use a permanent marker) near the serial number which identifies the ROAMS unit as having completed the modification (suggestion: "Mod 80, ver 2.3").**
20. Connect the I/O connector to the back of the ROAMS unit.
21. Carefully insert the power plug into the back of the ROAMS unit (twist it clockwise if necessary). There is no switch so power is immediately applied to the unit.
22. After approximately 30 seconds, observe that the Green LED flashes on for one second, then OFF for one second. After that sequence, disregard the LED activity.
23. Using a telephone, call the ROAMS unit and verify that it talks and announces its site number. Hang up if it does. Installation and testing is complete.

NOTE: It is not necessary to perform step 23, but it could save a second trip to the site.

24. If it fails to talk, execute a power down cycle by removing the power plug, count to five then re-install the jack. Observe the LED (see step 22) and repeat step 23. Attempt to perform this action three times before declaring a hard failure and ordering another ROAMS unit.
25. Carefully pack the removed EPROM using antistatic foam (along with a copy of the original shipping document stating it is the old ROAMS EPROM) then ship it back to Independent Technology.



ROAMS PCB SOLDER SIDE

Figure 1

Attachment B
Effectivity

SRS NWR Transmitter Locations (as of 1-9-04)

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
AK	FBSA2	Fairbanks	Ester Dome	1000	SR-416S
AK	HORA2	Homer	Diamond Ridge	1000	SR-416S
AK	JUNA2	Juneau	Juneau	1000	SR-416S
AK	KTCA2	Ketchikan	Point Higgins	1000	SR-416S
AK	KODA2	Kodiak	Woman's Bay	1000	SR-416S
AK	NOMA2	Nome	Fort Davis	1000	SR-416S
AK	SARA2	Seward	Spring Creek	300	SR-416S
AK	SKAA2	Sitka	Biorka Island	1000	SR-416S
AK	VLZA2	Valdez	Valdez	1000	SR-416S
AK	WRNA2	Wrangell	Wrangell	1000	SR-416S
AL	ABRA1	Auburn	Auburn	1000	SR-416D
AL	COLG1	Columbus	Phenix City	1000	SR-416D
AL	HNGA1	Henagar	Pea Ridge	1000	SR-416D
AL	JKSA1	Jackson	ToddTown	1000	SR-416D
AL	MOBA1	Mobile	Mobile	1000	SR-416D
AL	WIFA1	Winfield	Guin	1000	SR-416D
AR	FYTA4	Fayetteville	Winslow	1000	SR-416D
AR	FRTA4	Fort Smith	Ft. Chaffee	1000	SR-416D
AR	GRDA4	Gurdon	Gurdon	1000	SR-416D
AR	JNSA4	Jonesboro	Bono	1000	SR-416D
AR	LTRA4	Little Rock	Shinall Mtn.	1000	SR-416D
AR	MNTA4	Mountain View	Fox	1000	SR-416D
AR	STRA4	Star City	Star City	1000	SR-416D
AR	YVEA4	Yellville	Rea Valley	1000	SR-416D
AZ	PHNA3	Phoenix	South Mtn.	300	SR-416D
AZ	TCSA3	Tucson	Mt. Lemmon	100	SR-402SPS
CA	BKFC1	Bakersfield	Shirley Peak	100	SR-402SPS
CA	MPRC1	Eureka	Mt. Pierce	300	SR-416D
CA	FESC1	Fresno	Bear Mtn.	500	SR-416D
CA	MWLC1	Los Angeles	Mt. Lukens	330	SR-416D
CA	MUX.2	Monterey Marine	Mt. Umunhum	300	SR-416S
CA	PNTC1	Point Arena	Cold Springs Peak	1000	SR-416D

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
CA	RDDC1	Redding	South Fork Mtn.	100	SR-402SPS
CA	SATC1	Sacramento	Jackson Butte	330	SR-416D
CA	MTWC1	San Diego	Mt. Woodson	100	SR-416D
CA	MTUC1	San Francisco	Mt. Pise	330	SR-416D
CA	YUMC1	Yuma	Black Mtn.	100	SR-402SPS
CO	ALMC2	Alamosa	Pool Table Mtn.	300	SR-416D
CO	CORC2	Colorado Springs	Austin Bluffs	100	SR-402SPS
DE	LWED1	Lewes	Green Hill	500	SR-416D
DE	SLSM2	Salisbury	Ralphs	1000	SR-416D
FL	DTBF1	Daytona Beach	Bumcombe Hill	1000	SR-416S
FL	FMYF1	Fort Myers	Fort Myers	1000	SR-416D
FL	FTP1	Fort Pierce	Fort Pierce	100	SR-402SPS
FL	GNVF1	Gainesville	Northwood	1000	SR-416D
FL	JKSF1	Jacksonville	Regency Square	1000	SR-416D
FL	LVAF1	Live Oak	Mt. Pine	300	SR-416D
FL	MIMF1	Miami	University of Miami	1000	SR-416D
FL	ORLF1	Orlando	Orlando	1000	SR-416D
FL	PNCF1	Panama City	Courtney Point	1000	SR-416D
FL	PNSF1	Pensacola	Milton	1000	SR-416D
FL	TLHF1	Tallahassee	Tallahassee	1000	SR-416S
FL	TMPF1	Tampa Bay	Ruskin	1000	SR-416S
FL	MECF1	Tea Table Key	Tea Table Key	125	SR-402SPS
FL	WPBF1	West Palm Beach	Mangonia Park	500	SR-416D
GA	ATHG1	Athens	Neese	500	SR-416D
GA	SMNG1	Atlanta	Stone Mtn.	500	SR-416D
GA	AUUG1	Augusta	Wrens	1000	SR-416D
GA	CHTG1	Chatsworth	Cohutta Mtn.	200	SR-416D
GA	MCOG1	Macon	GA Forestry Comm.	1000	SR-416D
GA	PLHG1	Pelham	Pelham	1000	SR-416D
GA	SNDG1	Sandersville	Sandersville	1000	SR-416D
GA	SVNG1	Savannah	Savannah	1000	SR-416D
GA	WYCG1	Waycross	Hasty	500	SR-416D
GA	WNSG1	Waynesboro	Shell Bluff	375	SR-416D
HI	MKOH1	Kauai	Kokee	1000	SR-416D
HI	KLCH1	Kulani Cone	Kulani Cone	1000	SR-416D
HI	MTHH1	Maui	Mt. Haleakala	1000	SR-416D

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
IA	CDRI4	Cedar Rapids	Cedar Rapids	1000	SR-416S
IA	SICI4	Sioux City	Lawton	1000	SR-416S
IA	WRLI4	Waterloo	Bremer	1000	SR-416S
ID	BOII1	Boise	Doe Point	100	SR-402SPS
ID	LWSI1	Lewiston	Winchester Grade	100	SR-402SPS
ID	PCTI1	Pocatello	Atomic City	100	SR-402SPS
ID	TFLI1	Twin Falls	Jerome	100	SR-402SPS
IL	CHMI2	Champaign	Champaign	1000	SR-416D
IL	IL.122	DeKalb	!	100	SR-402SPS
IL	MOLI2	Quad Cities	Rock Island	1000	SR-416D
IL	RRDI2	Rockford	Latham Park	1000	SR-416D
IN	BOMI3	Bloomington	Indiana University	1000	SR-416D
IN	FWYI3	Fort Wayne	Fort Wayne	1000	SR-416D
IN	INPI3	Indianapolis	Indianapolis	1000	SR-416D
IN	LFTI3	Monticello/Lafayette	Yeoman	1000	SR-416D
IN	IWX	North Webster	State Rd. 13 (State Hwy.)	100	SR-402SPS
IN	TRHI3	Putnamville	Putnamville	1000	SR-416D
IN	STBI3	South Bend	Mishawaka	1000	SR-416D
KS	CNTK1	Chanute	Erie	1000	SR-416D
KS	CNCK1	Concordia	Concordia	1000	SR-416D
KS	DGCK1	Dodge City	Ensign	1000	SR-416D
KS	ESWK1	Ellsworth	Ellsworth	1000	SR-416D
KS	CLBK1	Goodland	Colby	1000	SR-416D
KS	TPKK1	Topeka	Maple Hill	1000	SR-416D
KS	WCHK1	Wichita	Wichita	1000	SR-416D
LA	AXNL1	Alexandria	Jena	1000	SR-416D
LA	BROL1	Baton Rouge	Baker	1000	SR-416D
LA	BRAL1	Buras	Buras	1000	SR-416D
LA	LAFL1	Lafayette	Youngsville	1000	SR-416D
LA	LAKL1	Lake Charles	Sulphur	1000	SR-416D
LA	MNRL1	Monroe	Monroe	1000	SR-416D
LA	MGCL1	Morgan City	Morgan City	1000	SR-416D
LA	SHRL1	Shreveport	Lake View	1000	SR-416D
MA	BSTM3	Boston	Great Blue Hill	500	SR-416D
MA	HANM3	Bourne/Hyannis	Camp Edwards	1000	SR-416D
MA	WRCM3	Worcester	Paxton	500	SR-416D

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
MD	BALM2	Baltimore	Pikesville	1000	SR-416D
MD	HGTM2	Hagerstown	Clear Spring	1000	SR-416D
ME	PRTM1	Portland	Goat Mtn.	500	SR-416D
MI	HRNM4	Alpena	Herron	500	SR-416D
MI	SFDM4	Detroit	Southfield	330	SR-416D
MI	CLOM4	Flint	Clio	1000	SR-416D
MI	KNTM4	Grand Rapids	Kentwood	1000	SR-416S
MI	HGTM4	Houghton	Painesdale	1000	SR-416D
MI	NGNM4	Marquette	Negaunee	300	SR-416D
MI	ONDm4	Onondaga	Rossmann Rd.	500	SR-416D
MI	DFTM4	Sault Ste Marie	Daftner	1000	SR-416D
MI	TVCM4	Traverse City	Traverse City	330	SR-416S
MN	DLTM5	Duluth	Arnold Site	1000	SR-416S
MN	INFM5	International Falls	Little Fork	1000	SR-416S
MN	LASW3	LaCrosse	LaCrescent	1000	SR-416D
MN	MKTM5	Mankato	Janesville	1000	SR-416S
MN	MINM5	Minneapolis/St. Paul	Minneapolis	1000	SR-416D
MN	RSTM5	Rochester	Viola	1000	SR-416S
MN	SCDM5	St. Cloud	St. Cloud	1000	SR-416S
MN	TFRM5	Thief River Falls	Thief River Falls	1000	SR-416D
MN	WLRM5	Willmar	New London	1000	SR-416S
MO	CMDM7	Camdenton	Osage Beach	1000	SR-416D
MO	COLM7	Columbia	Fulton	1000	SR-416D
MO	HANM7	Hannibal	Hannibal	1000	SR-416D
MO	HERM7	Hermitage	Lake PomDeTerre	100	SR-402SPS
MO	CARM7	Joplin	Avilla, Carthage	1000	SR-416D
MO	KSCM7	Kansas City	Federal Building	1000	SR-416D
MO	STJM7	Saint Joseph	Saint Joseph	1000	SR-416D
MO	SIKM7	Sikeston	Idalia	1000	SR-416D
MO	SRNM7	Springfield	Fordland	1000	SR-416D
MO	STLM7	St. Louis	Shrewsbury	1000	SR-416D
MS	ACRM6	Ackerman	Ackerman	300	SR-416D
MS	BUDM6	Bude	Smithdale	400	SR-416D
MS	CMBM6	Columbia	Columbia	100	SR-402SPS
MS	GLPM6	Gulfport	Gilfport	1000	SR-416D
MS	INVM6	Inverness	Inverness	500	SR-416D

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
MS	OXRM6	Oxford	Taylor	400	SR-416D
MT	EMRM8	Billings	Emerald Hills	300	SR-416D
MT	BUTM8	Butte	XI Heights	100	SR-402SPS
MT	FPRM8	Glasgow	Signal Hill	300	SR-416D
MT	GREM8	Great Falls	Bootlegger Hill	1000	SR-416D
MT	HREM8	Havre	Squaw Butte	300	SR-416D
MT	HELM8	Helena	Hogback Mtn.	1000	SR-402SPS
MT	KALM8	Kalispell	Blacktail Mtn.	100	SR-402SPS
MT	MLSM8	Miles City	Gov't. Hill	300	SR-416D
MT	MISM8	Missoula	Point Six Mtn.	100	SR-402SPS
NC	ASVN7	Asheville	Mt. Pisgah	250	SR-416D
NC	BDNN7	Buck Mountain	Badin	1000	SR-416D
NC	CHRN7	Charlotte	Spencer Mtn.	200	SR-416D
NC	FYTN7	Fayetteville	Ft. Bragg	250	SR-416D
NC	NEWN7	New Bern	Glenburnie Garden	1000	SR-416D
NC	ROCN7	Rocky Mount	Tarboro	1000	SR-416D
NC	WINN7	Wilmington	Winnabow	1000	SR-416D
NC	WNSN7	Winston-Salem	Sauratown Mtn.	100	SR-402SPS
ND	BSMN8	Bismarck	St. Anthony	1000	SR-416D
ND	DKNN8	Dickinson	Daglum	800	SR-416D
ND	FARN8	Fargo	Fargo	1000	SR-416S
ND	JMTN8	Jamestown	Cable Serv. Tower	1000	SR-416D
ND	MILN8	Minot	South Prarie	1000	SR-416D
ND	PRBN8	Petersburg	Dahlen	1000	SR-416D
ND	WILN8	Williston	Williston	1000	SR-416D
NE	BASN1	Bassett	Bassett	630	SR-416S
NE	GDIN1	Grand Island	Giltner	1000	SR-416D
NE	HOLN1	Holdrege	Atlanta	1000	SR-416S
NE	LINN1	Lincoln	Lincoln	1000	SR-416D
NE	MRMN1	Merriman	Merriman	1000	SR-416S
NE	NRFN1	Norfolk	Carroll	800	SR-416D
NE	NOPN1	North Platte	Sutherland	1000	SR-416S
NE	OMMN1	Omaha	Omaha	1000	SR-416D
NE	SCTN1	Scottsbluff	Angora	1000	SR-416S
NH	CCRN3	Concord	Pembroke	330	SR-416D
NJ	ATCN4	Atlantic City	Atlantic City	1000	SR-416D

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
NM	ALBN5	Albuquerque	Albuquerque	100	SR-402SPS
NM	CADN5	Carlsbad	Carlsbad	100	SR-416D
NM	CVSN5	Clovis	Clovis	100	SR-402SPS
NM	DSMN5	Des Moines	Sierra Grande	100	SR-402SPS
NM	FRGN5	Farmington	Farmington	100	SR-402SPS
NM	HOBN5	Hobbs	Maljamar	100	SR-402SPS
NM	LCCN5	Las Cruces	Tortugas Mtn.	100	SR-402SPS
NM	ROWN5	Roswell	Roswell	100	SR-402SPS
NM	RDON5	Ruidoso	Sierra Blanca	100	SR-402SPS
NM	SNFN5	Santa Fe	Tesuque Peak	100	SR-402SPS
NV	WTPN2	Elko	West Twin Peak	100	SR-402SPS
NV	CAVN2	Ely	Cave Mtn.	100	SR-402SPS
NV	LASN2	Las Vegas	Red Mtn	100	SR-402SPS
NV	RNNN2	Reno	Slide Mtn.	100	SR-402SPS
NV	WNNN2	Winnemucca	Winnemucca Mtn.	100	SR-402SPS
NY	ALNN6	Albany	New Scotland	1000	SR-416D
NY	BINN6	Binghamton	Binghamton	1000	SR-416D
NY	ELRN6	Elmira	Hawley Hill	1000	SR-416D
NY	HLDN6	Highland	Illinois Mtn.	1000	SR-416D
NY	RINN6	Riverhead	Riverhead	1000	SR-416D
NY	WTNN6	Walton	Houck Mtn.	100	SR-402SPS
OH	ARNO1	Akron	!	500	SR-416D
OH	CLDO1	High Hill	High Hill	1000	SR-416D
OK	CINO2	Clinton	Arapaho	500	SR-416D
OK	EIDO2	Enid	Drummond	200	SR-416D
OK	LONO2	Lawton	Lawton	1000	SR-416D
OK	MCLO2	McAlester	McAlester	1000	SR-416D
OK	OKLO2	Oklahoma City	Oklahoma City	1000	SR-416D
OK	TULO2	Tulsa	Tulsa	500	SR-416D
OR	CBYO3	Coos Bay	Noah Butte	330	SR-416D
OR	EGNO3	Eugene	Bandon Heights	100	SR-402SPS
OR	KLFO3	Klamath Falls	Hogback Mtn.	100	SR-402SPS
OR	MEDO3	Medford	Blackwell Hill	1000	SR-416D
OR	PDLO3	Pendleton	Spout Springs	330	SR-416D
OR	PTLO3	Portland	Goat Mtn.	330	SR-416D
OR	ROSO3	Roseburg	Dodson Mtn.	100	SR-416D

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
OR	SEMO3	Salem	Prospect Hill	1000	SR-402SPS
PA	ANTP1	Allentown	Allentown	1000	SR-416D
PA	CLEP1	Clearfield	Clearfield	500	SR-416D
PA	ERIP1	Erie	Erie	330	SR-416D
PA	HRRP1	Harrisburg	Blue Mtn.	1000	SR-416D
PA	JNSP1	Johnstown	Laurel Hill	250	SR-416D
PA	PBRP1	Pittsburgh	Pittsburgh	1000	SR-416S
PA	TWDP1	Towanda	Mt. Pisgah	1000	SR-416D
PA	WLKP1	Wilkes-Barre	Penobscot Knob	250	SR-416D
PA	WLMP1	Williamsport	Montoursvil	1000	SR-416D
PR	MRIP4	Maricao	Monte Del Estado	1000	SR-416D
PR	SNJP4	San Juan	Cerro La Mesa	1000	SR-416D
RI	PRVR1	Providence	Johnston	500	SR-416D
SC	BEFS1	Beaufort	Green Pond	350	SR-416S
SC	CHRS1	Charleston	Awendaw	1000	SR-416S
SC	CMBS1	Columbia	West Columbia	1000	SR-416D
SC	MYRS1	Conway/Myrtle Beach	Aynor	1000	SR-416S
SC	FLOS1	Florence	Pockett Rd.	1000	SR-416S
SC	GNVS1	Greenville	Paris Mtn.	1000	SR-416S
SC	SMTS1	Sumter	Sumter	100	SR-402SPS
SD	ABRS2	Aberdeen	Aberdeen	1000	SR-416D
SD	HROS2	Huron	Wessington	1000	SR-416D
SD	PERS2	Pierre	Presho Tower	700	SR-416D
SD	RPCS2	Rapid City	Cabot Hill	1000	SR-416D
SD	ROWS2	Sioux Falls	Rowena	1000	SR-416D
TN	BSTT1	Bristol	Holston Mtn.	500	SR-416D
TN	CTNT1	Chattanooga	Signal Mtn.	1000	SR-416D
TN	COKT1	Cookeville	Monterey	200	SR-416D
TN	JKST1	Jackson	Jackson	1000	SR-416D
TN	KXVT1	Knoxville	Sharps Ridge	1000	SR-416D
TN	MMPT1	Memphis	Memphis	1000	SR-416D
TN	NSVT1	Nashville	Nashville	1000	SR-416S
TN	SLBT1	Shelbyville	Beech Grove	200	SR-416D
TN	WVRT1	Waverly	McEwen	1000	SR-416D
TX	AILT2	Abilene	Cedar Gap Mtn.	1000	SR-416D
TX	AMRT2	Amarillo	Amarillo	1000	SR-416D

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
TX	AUIT2	Austin	Austin	1000	SR-416D
TX	BCTT2	Bay City	Bay City	1000	SR-416D
TX	BMTT2	Beaumont	Beaumont	1000	SR-416D
TX	BGRT2	Big Spring	Big Spring	1000	SR-416D
TX	PHRT2	Brownsville	Brownsville	1000	SR-416D
TX	BYNT2	Bryan	College Station	1000	SR-416D
TX	CCHT2	Corpus Christi	Corpus Christi	1000	SR-416D
TX	FRTT2	Crowley / Fort Worth	Burleson	1000	SR-416D
TX	DAST2	Dallas	Dallas	1000	SR-416D
TX	DRIT2	Del Rio	Amistad Village	1000	SR-416D
TX	GLVT2	Galveston	Galveston	1000	SR-416D
TX	HOUT2	Houston	Houston	330	SR-416D
TX	JUTT2	Junction	Junction	1000	SR-416D
TX	RTVT2	La Grange	Rutersville	1000	SR-416D
TX	LRDT2	Laredo	Laredo	1000	SR-416D
TX	LBBT2	Lubbock	New Deal	1000	SR-416D
TX	LKNT2	Lufkin	Lufkin	1000	SR-416D
TX	MDAT2	Midland/Odessa	Odessa	1000	SR-416D
TX	PAIT2	Paris	Paris	1000	SR-416D
TX	PHAT2	Pharr	Pharr	1000	SR-416D
TX	PCCT2	Port O'Connor	Port O'Connor	100	SR-402SPS
TX	RHIT2	Richland Springs	Richland Springs	1000	SR-416D
TX	SNAT2	San Angelo	San Angelo	1000	SR-416D
TX	SATT2	San Antonio	San Antonio	1000	SR-416D
TX	SHRT2	Sherman	Sherman/Denison	1000	SR-416D
TX	TEXA4	Texarkana	Texarkana	1000	SR-416D
TX	TYLT2	Tyler	Tyler	1000	SR-416D
TX	VRTT2	Victoria	Victoria	1000	SR-416D
TX	WAOT2	Waco	Moody	1000	SR-416D
TX	WCFT2	Wichita Falls	Wichita Falls	1000	SR-416D
UT	NAVU1	Lake Powell	Navajo Mtn.	100	SR-416D
UT	LGAU1	Logan	Mt. Logan	100	SR-402SPS
UT	CEDU1	Milford/Cedar City	Frisco Peak	100	SR-402SPS
UT	SLKU1	Salt Lake City	Bacchus	330	SR-416D
UT	VRLU1	Vernal	Asphalt Ridge	100	SR-402SPS
VA	HTHV2	Heathsville	Heathsville	1000	SR-416D

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
VA	LNCV2	Lynchburg	Madison Heights	1000	SR-416D
VA	NRFV2	Norfolk	Driver	1000	SR-416D
VA	RCHV2	Richmond	Sandstone	1000	SR-416D
VA	RNKV2	Roanoke	Poor Mtn.	1000	SR-416D
VT	BRLV1	Burlington	Mt. Mansfield	1000	SR-416D
VT	MRLV1	Marlboro	Ames Hill	300	SR-416D
VT	WNDV1	Windsor	Mt. Ascutney	400	SR-416D
WA	ARTW1	Astoria	Naselle Ridge	330	SR-402SPS
WA	NEBW1	Neah Bay	Bohokus Peak	330	SR-416D
WA	SETW1	Seattle	Couger Mtn.	100	SR-402SPS
WA	SOAW1	Spokane	Spokane Mtn.	100	SR-402SPS
WA	WNTW1	Wenatchee	Eagle Rock	100	SR-402SPS
WA	YKMW1	Yakima	Ahtanum Ridge	300	SR-416D
WI	KLRW3	Dubuque	Kieler	1000	SR-416D
WI	GRBW3	Green Bay	Scrays Hill	1000	SR-416D
WI	MDSW3	Madison	Middleton Junction	1000	SR-416D
WI	MEOW3	Menomonie	Wheeler	1000	SR-416D
WI	DLFW3	Milwaukee	Delafield	1000	SR-416D
WI	WAMW3	Wausau	Marathon	1000	SR-416D
WV	BECW2	Beckley	Flat Top	400	SR-416D
WV	CRLW2	Charleston	Shinnston	1000	SR-416D
WV	CRKW2	Clarksburg	Shinnston	1000	SR-416D
WV	GLBW2	Gilbert	Mingo Mtn.	300	SR-416D
WV	HTOW2	Hinton	Keeney Mtn.	1000	SR-416D
WV	MFDW2	Moorefield	Branch Mtn.	1000	SR-416D
WV	SNCW2	Spencer	Spencer	500	SR-416D
WV	STTW2	Sutton	Flatwoods	1000	SR-416D
WY	CSRW4	Casper	Casper Mtn.	400	SR-416D
WY	CHYW4	Cheyenne	Pole Mtn.	1000	SR-416D
WY	LNDW4	Lander	Lander	300	SR-416D
WY	SRDW4	Sheridan	Banner Peak	400	SR-416D

Energy-Onix NWR Transmitter Locations (as of 1-9-04)

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
AL	ANIA1	Anniston	Mt. Cheaha	1000	WRT-1000
AL	BRMA1	Birmingham	WBIQ TV	1000	WRT-1000
AL	CUMA1	Cullman	Cullman	100	WRT-100
AL	DMPA1	Demopolis	Jefferson	1000	WRT-1000
AL	DZRA1	Dozier	Dozier	800	WRT-1000
AL	FRNA1	Florence	Crooked Oak	1000	WRT-1000
AL	LSVA1	Louisville	Texasville	1000	WRT-1000
AL	MTGA1	Montgomery	WAIQ TV	1000	WRT-1000
AL	TSCA1	Tuscaloosa	WVUA FM	1000	WRT-1000
FL	SLMF1	Salem	Salem	1000	WRT-1000
HI	HWKH1	Hawaii Kai	Hawaii Kai	100	WRT-1000
KS	LNOK1	Lenora	Lenora	300	WRT-100
MI	WTSM4	Gaylord	Waters	100	WRT-100
MN	PRDM5	Park Rapids	Park Rapids	1000	WRT-100
MO	BUBM7	Crawford County	Crawford County	1000	WRT-1000
MO	SRVM7	Summersville	Summersville	1000	WRT-1000
NC	MGVN7	Margartsville	Margartsville	100	WRT-1000
ND	GDFN8	Grand Forks	Grand Forks	50	WRT-1000
ND	WBTN8	Webster	Webster	300	WRT-1000
PA	PAKP1	Parker	Parker	1000	WRT-1000
TN	LWRT1	Lawrenceburg	Flanigan Hill	1000	WRT-1000
TX	INRT2	Kerrville	Ingram	1000	WRT-1000
TX	LRNT2	Llano	Fowler Hill	1000	WRT-1000
WI	ASLW3	Ashland	Ashland	1000	WRT-1000
WI	COLW3	Coloma	Greenbay	300	WRT-1000
WI	CANW3	Crandon	Crandon	750	WRT-1000
WI	FOLW3	Fond Du Lac	Fond Du Lac	1000	WRT-1000
WI	PARW3	Janesville	Milton - Rock County	200	WRT-1000
WI	PFLW3	Park Falls	Park Falls	1000	WRT-1000
WI	BONW3	Prairie Du Chien	Bloomington	300	WRT-1000
WI	RANW3	Racine	Racine	300	WRT-1000
WI	OFVW3	Richland Center	Ash Ridge	200	WRT-1000
WI	SBGW3	Sheboygan	Sheboygan	200	WRT-1000

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
WI	SISW3	Sister Bay	Sister Bay	500	WRT-1000
WI	SONW3	Spooner	Webster	1000	WRT-1000
WI	WTHW3	Withee	Withee	1000	WRT-1000

Crown NWR Transmitter Locations (as of 1-9-04)

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
AK	FRSA2	Anchorage	Anchorage	300	WR-300
AK	BRWA2	Barrow	Barrow	300	WR-300
AK	BWRA2	Bethel	Bethel	1000	WR-1000
AK	CRDA2	Cordova	Ski Hill	1000	WR-1000
AK	CRGA2	Craig	Craig	1000	WR-1000
AK	DWRA2	Dutch Harbor	Unalaska	300	WR-300
AK	HNSA2	Haines	Haines	1000	WR-1000
AK	KWNA2	Kotzebue	Kotzebue	300	WR-300
AK	NWRA2	Ninilchik	Ninilchik	300	WR-300
AK	SDTA2	Soldotna	Soldotna	300	WR-300
AK	WARA2	Wasilla	Wasilla	300	WR-300
AK	WWRA2	Whittier	Whittier	300	WR-300
AK	YAKA2	Yakutat	Monti Bay	1000	WR-1000
AL	AL.AG04	Arab	Marshall County	300	WR-300
AL	BTNA1	Brewton	Brewton	1000	WR-1000
AL	AL.AG02	Greenville	Greenville	300	WR-300
AL	HNTA1	Huntsville	Huntsville	1000	WR-1000
AL	AL.101	Oneonta	Oneonta	300	WR-300
AL	AL.704	Selma	Selma	300	WR-300
AR	AR.AD20	Cherokee Village	Cherokee Village	300	WR-300
AR	FTHA4	Fountain Hill	Fountain Hill	1000	WR-1000
AR	AR.AG01	Marvell	Phillips County	1000	WR-1000
AR	MNNA4	Mena	Eagle Mtn.	300	WR-300
AR	MRRA4	Morrilton	Morrilton	300	WR-300
AR	MDAA4	Mount Ida	Mount Ida	300	WR-300
AR	SCSA4	Russell	Russell Mtn.	1000	WR-1000
AZ	HDNA3	Kingman	Hayden Peak	100	WR-100
AZ	RMTA3	Lake Havasu	Ram Mtn.	100	WR-100
CO	DURC2	Durango	Durango	300	WR-300
CO	FTMC2	Fort Morgan	Fort Morgan	300	WR-300
CO	LAAC2	Lamar	Prowers County	1000	WR-1000
CO	MOTC2	Montrose	Buckhorn Lakes	300	WR-300
CO	CO.23	Springfield	Baca County	1000	WR-1000
CO	CO.26	Walsenburg	Walsenburg	300	WR-300
CT	CRNC3	Cornwall	Mohawk Mtn.	500	WR-1000

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
FL	LATF1	Iverness	Lecanto	300	WR-300
FL	KWSF1	Key West	Sugarloaf Shores	1000	WR-1000
FL	FL.5	Largo	Seminole	1000	WR-1000
FL	MLBF1	Melbourne	Melbourne	1000	WR-1000
FL	FL.3	Morriston	Levy	1000	WR-1000
FL	NPEF1	Naples	Naples	1000	WR-1000
FL	PKTF1	Palatka	Palatka	300	WR-300
FL	VECF1	Sarasota	Venice	1000	WR-1000
FL	SRGF1	Sebring	Avon Park	300	WR-1000
GA	AMSG1	Americus	Americus	1000	WR-1000
GA	ASRG1	Ashburn	Ashburn	300	WR-300
GA	BXLG1	Baxley	English Eddy	300	WR-300
GA	BKRG1	Blakley	Blakely	1000	WR-1000
GA	BRGG1	Blue Ridge	Blue Ridge	300	WR-300
GA	BTBG1	Brasstown Bald	Brasstown Bald Mtn.	100	WR-100
GA	BRWG1	Brunswick	Arco	300	WR-300
GA	BHNG1	Buchanan	Buchanan	1000	WR-1000
GA	GLYG1	Clayton	Glassy Mtn.	300	WR-300
GA	WKAG1	Cleveland	Wauka Mtn.	300	WR-300
GA	EASG1	Eastman	Eastman	1000	WR-1000
GA	EATG1	Eatonton	Eatonton	1000	WR-1000
GA	JSPG1	Jesup	Jesup	300	WR-300
GA	LGRG1	La Grange	La Grange	300	WR-300
GA	MTRG1	Metter	Metter	1000	WR-1000
GA	TLRG1	Summerville	Taylors Ridge	300	WR-300
GA	TOMG1	Thomaston	Thomaston	1000	WR-1000
GA	TCAG1	Toccoa	Currahee Mtn.	250	WR-1000
GA	VLTG1	Valdosta	Hahira	1000	WR-1000
IA	BURI4	Burlington	Burlington	300	WR-300
IA	CALI4	Carroll	Carroll	300	WR-300
IA	DECI4	Decorah	Decorah	300	WR-300
IA	DSMI4	Des Moines	Johnston	1000	WR-1000
IA	ESSI4	Essex	Essex	300	WR-300
IA	FFDI4	Fairfield	Fairfield	300	WR-300
IA	FDOI4	Fort Dodge	Fort Dodge	300	WR-300
IA	KCKI4	Hancock/Pottawattam	Hancock	1000	WR-1000

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
IA	IFSI4	Iowa Falls	Hampton	300	WR-300
IA	RATI4	Lake Rathbun	Lake Rathbun	300	WR-300
IA	LOXI4	Lenox	Lenox	300	WR-300
IA	MQTI4	Maquoketa	Jackson	300	WR-300
IA	MARI4	Marshalltown	Marshalltown	300	WR-300
IA	MILI4	Milford	Milford	300	WR-300
IA	MTZI4	Montezuma	Montezuma	300	WR-300
IA	SBNI4	Sanborn	Sanborn	300	WR-300
IA	STA14	St. Ansgar	Kirkwood & 420th	1000	WR-1000
IA	STMI4	Storm Lake	Lakeside	300	WR-300
IA	VWTI4	Van Wert	Osceola	300	WR-300
ID	BLYI1	Burley	Alibon	100	WR-300
ID	SDGI1	Sedgewick Peak	Soda Springs	100	WR-300
IL	BLOI2	Bloomington	Bloomington Heights	300	WR-300
IL	CESI2	Chester	Chester	300	WR-300
IL	CHI2	Chicago	Sear's Tower	500	WR-1000
IL	CCCI2	Crescent City	Crescent City	300	WR-300
IL	CLKI2	Crystal Lake	Crystal Lake	300	WR-300
IL	DINI2	Dixon	Dixon	300	WR-300
IL	FPTI2	Freeport	Eleroy	300	WR-300
IL	GLBI2	Galesburg	Galesburg	300	WR-300
IL	HILI2	Hillsboro	Hillsboro	300	WR-300
IL	JACI2	Jacksonville	Jacksonville	300	WR-1000
IL	JERI2	Jerseyville	Jerseyville	300	WR-300
IL	KAKI2	Kankakee	Aroma Park	300	WR-300
IL	LPTI2	Lockport	Downers Grove	1000	WR-1000
IL	MCBI2	Macomb	Macomb	1000	WR-1000
IL	MRII2	Marion	Goreville	1000	WR-1000
IL	MLBI2	McLeansboro	McLeansboro	300	WR-300
IL	NETI2	Newton	Newton	1000	WR-1000
IL	ODLI2	Odell	Odell	1000	WR-1000
IL	PARI2	Paris	Paris	300	WR-300
IL	PERI2	Peoria	East Peoria	1000	WR-1000
IL	PLAI2	Plano	Yorkville	300	WR-300
IL	TSKI2	Princeton	Tiskilwa	300	WR-300
IL	SALI2	Salem	Salem	100	WR-1000

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
IL	SHVI2	Shelbyville	Shelbyville	300	WR-300
IL	SRFI2	Springfield	Springfield	1000	WR-1000
IN	ANGI3	Angola	Angola	1000	WR-1000
IN	EWSI3	Edwardsport	Edwardsport	1000	WR-1000
IN	EVNI3	Evansville	Fort Branch	1000	WR-1000
IN	GRAI3	Georgia	Georgia	1000	WR-1000
IN	NALI3	Louisville	Floyds Knob	1000	WR-1000
IN	NEWI3	Newport	Vermillion	300	WR-300
IN	RMDI3	Richmond	Wayne CO Courthouse	300	WR-300
IN	JKSI3	Seymour	Seymour	1000	WR-1000
KS	ABEK1	Abilene	Abilene	1000	WR-1000
KS	BUTK1	Beaumont	Beaumont	300	WR-300
KS	BLDK1	Belvidere	Belvidere	1000	WR-1000
KS	BRAK1	Blue Rapids	Merrimac	1000	WR-1000
KS	DIGK1	Dighton	!	1000	WR-1000
KS	HSMK1	Halls Summit	Burlington	1000	WR-1000
KS	HKSK1	Hays	Hays	1000	WR-1000
KS	KIRK1	Kirwin	Phillipsburg	1000	WR-1000
KS	MEAK1	Meade	!	1000	WR-1000
KS	ULSK1	Ulysses	Ulysses	1000	WR-1000
KY	ALDK2	Ashland	!	1000	WR-1000
KY	BATK2	Beattyville	Beattyville	300	WR-300
KY	BWLK2	Bowling Green	Sugar Grove	1000	WR-1000
KY	BURK2	Burkesville	Smith Grove Ridge	300	WR-300
KY	CAMK2	Campbellsville	Spurlington	300	WR-300
KY	CVNK2	Covington	Forest Hill	1000	WR-1000
KY	EKRK2	Ekron	Ekron	300	WR-300
KY	EZBK2	Elizabethtown	!	300	WR-300
KY	FNBK2	Frenchburg	Frenchburg	300	WR-300
KY	HALK2	Harlan	Harlan	300	WR-300
KY	HADK2	Hazard	Hazard	1000	WR-1000
KY	HPVK2	Hopkinsville	Hopkinsville	300	WR-300
KY	HCVK2	Horse Cave	Hart County	1000	WR-1000
KY	JKSK2	Jackson	Jackson	300	WR-300
KY	LXNK2	Lexington	Richmond	1000	WR-1000
KY	LNNK2	London	London	300	WR-300

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
KY	MHTK2	Manchester	Manchester	300	WR-300
KY	MAYK2	Mayfield	Mayfield	1000	WR-1000
KY	MVLK2	Maysville	Washington	300	WR-300
KY	MCEK2	McKee	McKee	300	WR-300
KY	MCOOK2	Monticello	Monticello	300	WR-300
KY	MRHK2	Morehead	Morehead	500	WR-300
KY	MVNK2	Mount Vernon	Mount Vernon	300	WR-300
KY	OTNK2	Owenton	Owenton	300	WR-300
KY	PTSK2	Paintsville	Paintsville	100	WR-300
KY	PEPK2	Phelps	Phelps	300	WR-300
KY	PEVK2	Pikeville	Pikeville	500	WR-300
KY	PNLK2	Pineville	Pineville	300	WR-300
KY	SMRK2	Somerset	Bethelridge	1000	WR-1000
KY	STCK2	St. Charles	Madisonville	1000	WR-1000
KY	STOK2	Stanton	Powell	300	WR-300
KY	WBTK2	West Liberty	West Liberty	300	WR-300
KY	WHIK2	Whitesville	Whitesville	300	WR-300
KY	WMGK2	Williamsburg	Williamsburg	300	WR-300
LA	BOGL1	Bogalusa	Bogalusa	1000	WR-1000
LA	LA.6	Natchitoches	Natchitoches	1000	WR-1000
MA	CTAM3	Egremont	Egremont	300	WR-300
MD	FSTM2	Frostburg	Dan's Rock	300	WR-300
MD	SUDM2	Sudlersville	Sudlersville	1000	WR-1000
ME	FVEM1	Frenchville	Madawaska	300	WR-300
ME	MBSM1	Meddybemps	Penobscot County	300	WR-300
ME	ALNM1	Springfield	Springfield	1000	WR-1000
MI	ADIM4	Adrian / Petersburg	Lenawee County	300	WR-300
MI	ESCM4	Escanaba	Escanaba	1000	WR-1000
MI	MPLM4	Mount Pleasant	Atlanta	1000	WR-1000
MI	NWYM4	Newberry	!	300	WR-300
MI	MI.08	Sandusky	Sanilac County	300	WR-300
MI	RWBM4	West Branch	West Branch	1000	WR-1000
MI	WOVM4	West Olive	West Olive	300	WR-300
MN	APLM5	Appleton	Appleton	1000	WR-1000
MN	BMDM5	Bemidji	Bemidji	1000	WR-1000
MN	CLRM5	Clearwater	Wright County	1000	WR-1000

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
MN	GRAM5	Coleraine	Grand Rapids	1000	WR-1000
MN	ELEM5	Elephant Lake	Orr	300	WR-300
MN	EMNM5	Ely	Ely	300	WR-300
MN	MN.2	Fergus Falls	Fergus Falls	1000	WR-1000
MN	FINM5	Finland	Lake County	300	WR-300
MN	BLKM5	Grand Marais	Bogus Lake	300	WR-300
MN	GFLM5	Gun Flint Lake	Gun Flint Lake	300	WR-300
MN	JFFM5	Jeffers	Jeffers	1000	WR-1000
MN	LABM5	Lake Bronson	Lake Bronson	300	WR-300
MN	LEAM5	Leader	Omen Lake	1000	WR-1000
MN	NEUM5	New Ulm	New Ulm	1000	WR-1000
MN	PCTM5	Pine City	Pine County	1000	WR-300
MN	RABM5	Rabbit Lake	Aitkin	1000	WR-1000
MN	RSLM5	Russell	Russell	1000	WR-1000
MN	VGAM5	Virginia	Virginia	300	WR-300
MN	MN.715	Waubun	Waubun	300	WR-300
MO	ALLM7	Alton	Alton	300	WR-300
MO	BRAM7	Branson	Reeds Spring	1000	WR-1000
MO	CMNM7	Cameron	Cameron	300	WR-300
MO	CGIM7	Cape Girardeau	Cape Girardeau	300	WR-300
MO	CTNM7	Carrollton	Carrollton	1000	WR-1000
MO	SMDM7	Clinton	Shawnee Mound	1000	WR-1000
MO	DNPM7	Doniphan	Doniphan	300	WR-300
MO	ESLM7	EI Dorado Springs	Eldorado Springs	1000	WR-1000
MO	CDMM7	Fredricktown	Fredricktown	1000	WR-1000
MO	GAIM7	Gainesville	Gainesville	1000	WR-300
MO	KAHM7	Kahoka	Kahoka	300	WR-300
MO	LAPM7	La Plata	La Plata	330	WR-300
MO	LANM7	Lancaster	Lancaster	300	WR-300
MO	MAYM7	Maryville	Maryville	1000	WR-1000
MO	PIEM7	Piedmont	Sanders Hollow	1000	WR-1000
MO	JMSM7	Prairie Home	Jamestown	1000	WR-1000
MO	TREM7	Trenton	Galt	1000	WR-1000
MO	GDTM7	Wardell	Gideon Junction	300	WR-1000
MO	WPTM7	West Plains	West Plains	300	WR-300
MS	BONM6	Booneville	Dumas	700	WR-1000

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
MS	HTSM6	Hattiesburg	Melba	1000	WR-1000
MS	JCKM6	Jackson	Jackson	1000	WR-1000
MS	LKSM6	Leakesville	Green County	1000	WR-1000
MS	MERM6	Meridian	Rose Hill	1000	WR-1000
MT	BAKM8	Baker	Bechtold Hill	300	WR-300
NC	CPHN7	Cape Hatteras	Middletown	1000	WR-1000
NC	NC.3	Henderson	Macon	300	WR-300
NC	MTJN7	Jefferson	Ashe County	300	WR-300
NC	GMTN7	Linville	Grandmother Mtn.	300	WR-300
NC	MMEN7	Mamie	Mamie	300	WR-300
NC	RBLN7	Robbinsville	Teyahalee Bald Mtn.	300	WR-300
NC	NC.07	Warsaw	Duplin County	300	WR-300
NC	WDRN7	Windsor	Windsor	300	WR-300
ND	LGDN8	Langdon	Langdon	300	WR-300
ND	NTNN8	New Town	Belden (AG)	300	WR-300
ND	SHNN8	Sheyenne	Sheyenne	1000	WR-1000
ND	ND.AG03	Steele	Steele	300	WR-300
ND	WICN8	Willow City	Bottineau	300	WR-300
NE	BETN1	Beatrice	Ellis	300	WR-300
NE	CARN1	Cambridge	Cambridge	300	WR-300
NE	CHAN1	Chadron	Chadron St. Park	1000	WR-1000
NE	CBSN1	Columbus	Platte County	1000	WR-1000
NE	NE.R20	Lexington	Gosper County	300	WR-300
NE	MRAN1	Merna	Broken Bow	1000	WR-1000
NE	ODNN1	Ord	!	1000	WR-1000
NE	OSSN1	Oshkosh	Oshkosh (Ag.)	1000	WR-1000
NE	SHUN1	Shubert	Shubert	1000	WR-1000
NE	SDNN1	Sidney	Sidney	1000	WR-1000
NE	SUEN1	Superior	Nuckolls County	1000	WR-1000
NE	TREN1	Trenton	Hitchcock County	300	WR-300
NE	VLNN1	Valentine	Valentine	1000	WR-1000
NE	YNKN1	Yankton	Gavins Point Dam	1000	WR-1000
NH	MWN	Mt. Washington	Mt. Washington	300	WR-300
NH	SDLN3	Stratham	Stratham Hill	300	WR-300
NJ	HMGN4	Hardyston	Rudeville	1000	WR-1000
NJ	STHN4	Howell Township	Howell Township	300	WR-300

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
NY	NY.706	Call Hill	Mt. Washington	300	WR-300
NY	LEVN6	Cattaraugus	Little Valley	100	WR-100
NY	CPTN6	Cooperstown	Cornish Hill Rd.	100	WR-100
NY	NY.AG02	Gore Mtn.	Gore Mtn.	300	WR-300
NY	NY.707	Ithaca	Ithaca	1000	WR-1000
NY	MIDN6	Middleville	Herkimer County	300	WR-100
NY	NY.703	Mt. Washington	Bath	300	WR-300
NY	NY.AG01	Norwich	Barnes Hill	300	WR-300
OH	ATSO1	Athens	Elliottville	1000	WR-1000
OH	BDPO1	Bridgeport	Bridgeport	1000	WR-1000
OH	CYRO1	Carey	Carey	300	WR-300
OH	CLEO1	Cleveland	Chesterland	1000	WR-1000
OH	CLUO1	Columbus	Columbus	1000	WR-1000
OH	DYTO1	Dayton	Miamisburg	1000	WR-1000
OH	LMAO1	Lima	Wapakoneta	1000	WR-1000
OH	GLNO1	Mansfield	Butler	300	WR-300
OH	OTWO1	Otway	Moon Ridge	1000	WR-1000
OH	SND01	Sandusky	Castalia	1000	WR-1000
OH	YSTO1	Youngstown	Youngstown	125	WR-300
OK	ALUO2	Altus	Altus	1000	WR-1000
OK	ADRO2	Ardmore	Davis	300	WR-300
OK	OK.AG01	Atoka	Atoka	300	WR-300
OK	OK.1	Bartlesville	Washington County	1000	WR-1000
OK	OK.2	Broken Bow	Choctaw	1000	WR-1000
OK	OK.R1	Grove	Grove	300	WR-300
OK	OK.5	Oktaha	Vian	300	WR-300
OK	PNT02	Ponca City	Ponca City	500	WR-300
OK	WOWO2	Woodward	Woodward	1000	WR-1000
OR	BNBO3	Burns Butte	Harney	300	WR-300
PA	TSGP1	Huntingdon	Three Springs	1000	WR-1000
PA	MAVP1	Meadville	Meadville	300	WR-300
PA	PILP1	Philadelphia	Upper Roxbor	1000	WR-1000
PA	YNSP1	Warren	Youngsville	1000	WR-1000
SC	SC.AG01	Aiken	Aiken	300	WR-300
SC	SC.1	Barnwell	Barnwell	1000	WR-1000
SC	SC.703	Cheraw	Chesterfield	300	WR-300

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
SC	COSS1	Cross	Cross	300	WR-300
SC	GWTS1	Georgetown	Georgetown	300	WR-300
SC	SC.3	Kirksey	Greenwood County	1000	WR-1000
SC	SC.102	Orangeburg	Orangeburg	300	WR-300
SC	SC.4	Rock Hill	York	1000	WR-1000
SD	ARNS2	Arlington	Arlington	1000	WR-1000
SD	FATS2	Faith	Faith	1000	WR-1000
SD	FIRS2	Firesteel	Standing Rock	1000	WR-1000
SD	HSPS2	Hot Springs	Hot Springs	300	WR-300
SD	TPKS2	Lead	Terry Peak	300	WR-300
SD	LWYS2	Lowry	Lowry	1000	WR-1000
SD	MTCS2	Mitchell	Mitchell	1000	WR-1000
SD	PLPS2	Philip	Philip	1000	WR-1000
SD	PICS2	Pickstown	Pickstown	300	WR-300
SD	PRCS2	Porcupine	Porcupine Butte	1000	WR-1000
SD	RLCS2	Reliance	Medicine Butte	1000	WR-1000
SD	SSHS2	South Shore	South Shore	1000	WR-1000
SD	WRRS2	White River	!	1000	WR-1000
TN	CTWT1	Centerville	Hickman County	300	WR-300
TN	CLRT1	Clarksville	Clarksville	300	WR-300
TN	DRGT1	Dyersburg	Dyersburg	1000	WR-1000
TN	TN.AG02	Lafayette	Pleasant Shade	1000	WR-1000
TN	LBWT1	Lobelville	Lobelville	1000	WR-1000
TN	TN.2	Spencer	Hollow Rock	1000	WR-1000
TN	VALT1	Vale	Vale	1000	WR-1000
TN	WNGT1	Winchester	Winchester	1000	WR-1000
TX	TX.39	Borger	Borger	100	WR-1000
TX	BVVT2	Burkeville	Toledo Bend Dam	1000	WR-1000
TX	CIST2	Cisco	Cisco	1000	WR-1000
TX	CSCT2	Corsicana	Corsicana	1000	WR-1000
TX	CMBT2	Cumby	Greenville	1000	WR-1000
TX	DHST2	D'Hanis	D'Hanis	300	WR-300
TX	DILT2	Dilley	Dilley	300	WR-300
TX	GMRT2	Gilmer	Longview	1000	WR-1000
TX	GZLT2	Gonzales	Gonzales	1000	WR-1000
TX	TX.24	Milano	Hillsboro	300	WR-300

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
TX	TX.32	Mineral Wells	Palo Pinto	300	WR-300
TX	TX.13	Muenster	Muenster	300	WR-300
TX	ONKT2	Onalaska	Onalaska	1000	WR-1000
TX	OZNT2	Ozona	Ozona	300	WR-300
TX	PLTT2	Palestine	Palestine	1000	WR-1000
TX	TX.38	Plainview	Hale County	1000	WR-1000
TX	PHGT2	Rio Grande City	Rio Grande City	1000	WR-1000
TX	SMET2	Seminole	Gaines County	1000	WR-1000
TX	STPT2	Stephenville	Dublin	1000	WR-1000
TX	TX.14	Summerfield	Hereford	1000	WR-1000
TX	SXTT2	Sweetwater	Sweetwater	1000	WR-300
TX	UVVT2	Uvalde	Uvalde	1000	WR-1000
UT	MOBU1	Moab	Bald Mesa	300	WR-300
VA	CHVV2	Covesville	Mt. Oliver	1000	WR-1000
VA	MNSV2	Manassas	Independent Hill	1000	WR-1000
VT	BRMV1	St. Johnsbury	Burke Mtn.	1000	WR-1000
WA	WA.13	Capitol Peak	Olympia	200	WR-300
WA	DAYW1	Dayton	Patit	300	WR-300
WI	BOOW3	Baraboo	Baraboo	300	WR-300
WI	BFLW3	Black River Falls	Jackson County	300	WR-300
WI	LSMW3	Ladysmith	Rusk County	1000	WR-1000
WI	NWLW3	New London	Manawa/Ogdensburg	1000	WR-1000
WI	RHNW3	Rhineland	Oneida County	1000	WR-1000
WI	WSEW3	Wausaukeee	Wausaukeee	1000	WR-1000
WI	WNNW3	Winona	Fountain City	300	WR-300
WV	BMRW2	Backbone Mountain	Hendricks	300	WR-300
WV	GKRW2	Gregg Knob	Gregg Knob	300	WR-300
WV	WV.2	Monterville	Haines Knob	300	WR-300
WV	MGRW2	Morgantown	Morgantown	300	WR-300
WY	ENRW4	Evanston	Medicine Butte	300	WR-300
WY	RWNW4	Rawlins	Elk Mtn.	300	WR-300
WY	RSSW4	Rock Springs	Rock Springs	300	WR-300

Armstrong NWR Transmitter Locations (as of 1-9-04)

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
CA	AVXC1	Avalon	Catalina Island	100	G100
CA	CA.AG04	Conway Summit	Bridgeport	300	G300
CA	MUX.1	Monterey	Mt. Umunhum	300	G300
CA	CA.6	Mount Soledad	San Diego Marine	100	G300
CA	SNLC1	San Luis Obispo	Cuesta Peak	500	G300
CA	HSTC1	San Simeon	Hearst Castle	100	G100
CA	SNBC1	Santa Barbara	Broadcast Peak	330	G300
CA	UKWC1	Ukiah	Laughin Range	300	G300
CO	FTWC2	Franktown	Franktown	300	G300
CT	HRTC3	Hartford	Soapstone Mtn.	1000	G1000
CT	MRDC3	Meriden	West Peak	1000	G1000
CT	NLNC3	New London	Pie Hill	500	G1000
FL	EPOF1	East Point	East Point	1000	G1000
FL	FL.703	Princeton	Homestead	300	G300
HI	MTKH1	Oahu	Mt. Kaala	1000	G1000
KS	TINK1	Tribune	Tribune	300	G300
LA	NWOL1	New Orleans	New Orleans	1000	G1000
MA	MA.1	Essex (Marine)	Essex	300	G100
ME	DRSM1	Dresden	Wiscasset	300	G300
ME	ELSM1	Ellsworth	Dollard	1000	G1000
ME	GNRM1	Greenville	Greenville	300	G300
ME	MILM1	Milo	Milo	1000	G1000
ME	SGLM1	Sugarloaf	Sugarloaf	300	G300
MO	MO.708	Dixon	Fort Leonard Wood	1000	G1000
MT	BOZM8	Bozeman	Courthouse	100	G100
MT	BDSM8	Broadus	Five Mile Hill	300	G300
MT	CLEM8	Circle	Linsay	300	G300
MT	MT.7	Dillon	Red Rock	150	G300
MT	JDNM8	Jordan	Brockway	300	G300
MT	PWXM8	Poplar	!	300	G300
NC	RLEN7	Chapel Hill	Durham	1000	G1000
ND	CAVN8	Cavalier	Cavalier	300	G300
ND	ND.AG04	Fort Ransom	Fort Ransom	1000	G1000
NE	CIDN1	Albion	Columbus	300	G300
NH	MMTN3	Hanover	Hanover	300	G300

State	Site ID	Site Name	Site Location	RFA Pwr	Transmitter Model
NH	HNSN3	Holderness	Grafton CO	300	G300
NH	NH.101	Pack Monadnock	Peterborough	300	G300
NV	BHCN2	Bullhead City	Spirit Mtn.	100	G300
NV	POTN2	Pahrump	Potosi Mt	100	G100
NY	BFFN6	Buffalo	North Boston	330	G300
NY	RCHN6	Rochester	Pinnacle Hill	1000	G1000
NY	NY.07	Spencerport	Spencerport	300	G300
NY	SYRN6	Syracuse	Makyes Rd.	1000	G1000
OR	BRKO3	Brookings	Palmer Butte	1000	G1000
OR	FWRO3	Fossil	Snowboard Ridge	300	G300
PA	FRNP1	Altoona	Blair County	300	G300
PA	CODP1	Coudersport	!	300	G300
PA	SCOP1	State College	Little Flat Mtn.	100	G100
PA	WELP1	Wellsboro	Dutch Hill	1000	G1000
TN	TN.4	Hickman	Hickman	1000	G1000
UT	MNTU1	Manti	Sevier Valley	300	G300
WA	DLSW1	The Dalles	Columbia Gorge	300	G300
WY	AFNW4	Afton	Star Valley	300	G300
WY	CODW4	Cody	McCullough Peaks	300	G300
WY	GITW4	Gillette	Campbell County	1000	G1000
WY	GNDW4	Glendo	Glendo Reservoir	300	G1000
WY	JACW4	Jackson	Snow King Mtn.	300	G300
WY	KACW4	Kaycee	Johnson County	300	G300
WY	NCSW4	New Castle	New Castle	300	G300
WY	SUBW4	Pinedale	Sublette	300	G300
WY	CPPW4	Thermopolis.	Thermopolis	300	G300
WY	CMTW4	Worland	Greybull	300	G300

Attachment C

EMRS Report Sample

A26 Detail Form - ESCM2, SILVER SPRING, MD :: JOHN MERHI - Microsoft Internet Explorer

New A26 Commit A26 Place on Hold Copy A26 Delete A26 Detail Report Document Summary Help

GENERAL INFORMATION

1. Open Date 01/29/2004		Open Time 09:00	2. Op Initials WSH	3. Response Priority <input type="radio"/> Immediate <input type="radio"/> Routine <input checked="" type="radio"/> Low <input checked="" type="radio"/> Not Applicable	4. Close Date 01/29/2004	Close Time 11:00
5. Maintenance Description 443 characters left NWR/CRS NWR ROAMS Firmware Upgrade and Circuit Board Modification						

EQUIPMENT INFORMATION

6. Station ID* TMPPF1	7. Equipment Code B345	8. Serial Number TBW	9. TM M	10. AT M	11. How Ma 999
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Alert: Time Remaining:
(For Block 12 use only)

14. WORKLOAD INFORMATION

a. Routine Hours Minutes	b. Non-Routine Hours Minutes	c. Travel Hours Minutes	d. Misc Hours Minutes	e. Overtime Hours Minutes
			2	

MISCELLANEOUS INFORMATION

15. Maintenance Comments 604 characters left Inspected and upgraded the ROAMS EPROM firmware from ver 1.7 to ver 2.3 and modified the printed circuit board, I.A.W. CRS Mod Note 80, Revision A	16. Tech Initials GAF
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17. SPECIAL PURPOSE REPORTING INFORMATION

a. Mod No. 80A	b. Mod Act/Deact Date 01/29/2004	c. Block C	d. Trouble Ticket No.	e. Block E
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Commit A26 Place on Hold Copy A26 New A26 Cancel